## ABSTRACT

The present invention provides a modified substrate including a hydrophilic polymer wherein the soluble hydrophilic polymer ratio is 15 weight percent or less and the number of adhered human blood platelets is $10/4.3\times10^3$ $\mu m^2$ or less. In addition, the present invention provides a method for producing a modified substrate including a step of irradiating the substrate with radiation while the substrate is brought into contact with an aqueous solution containing a hydrophilic polymer and an antioxidant. The present invention provides a modified substrate having high hematologic compatibility wherein the hydrophilic polymer is immobilized on the surface of the substrate, and a method for producing the same.